

Notes on Two Endemic South African *Cypraea*

BY

R. N. KILBURN AND D. W. AIKEN

Natal Museum, Pietermaritzburg, and P. O. Box 13035, Knights, South Africa

(1 Text figure)

THE INFREQUENCY with which endemic South African *Cypraea* (subgenera *Cypraeovula*, *Luponia* and *Bernaya*) are collected alive has resulted in our knowledge of their dentition and anatomy being sadly deficient. The radulae of *C. fultoni* Sowerby, 1903 and *C. capensis* Gray, 1828 are here described, together with notes on relationships and distribution, and observations on the anatomy of the second species.

Cypraea (Bernaya) fultoni Sowerby, 1903

(Text figure 1 A)

A portion of the radula of this species was found by the second author amongst the completely decomposed contents of a shell taken from the stomach of a fish caught in Natal, and kindly made available by Mrs. E. Visag   of Johannesburg.

The radula pattern is that of the group R1 of KAY (1960: 280), although far from typical. The rachidian, which is higher than wide, has a dumbbell-shaped internal bract, but neither a subtending bract nor basal denticles; the base is flat, with rounded corners. The laterals are similarly higher than wide, and are interesting in that they possess a pair of denticles on either side of the mesocone, instead of the normal single denticle; further examples are required to show whether this feature is usual for the species.

The only similar type of dentition that can be traced occurs in the Western Australian *Cypraea rosselli* (Cotton, 1948) (cf. WILSON & McCOMB, 1967: plt. 334 E), which is presumably consubgeneric. Unfortunately nothing is known of mantle texture or the structure of the female genitalia in *C. fultoni*.

Distribution: While most specimens of *Cypraea fultoni* in collections are merely labelled "off Natal," the locality "off Durban" is not infrequently seen. It should be realised, however, that this port merely serves as the base of

operations for most commercial fishing vessels in Natal, and hence as the point of sale for these and other readily marketable shells. The only reliable data available to the authors indicate the chief habitat of *C. fultoni* to be in the region of Aliwal Shoal, just south of Umkomaas (ca. 30°15'S). The map given by BURGESS (1970: 57) is highly misleading.

Cypraea (Cypraeovula) capensis Gray, 1828

(Text figure 1 B)

Recently two living examples of this species were collected by Mrs. P. W. Faulkner at Gonubie, near East London (28°01'E), and kindly forwarded in a preserved state to the first author, together with relevant field notes. Although the bodies could only be extracted piecemeal, the more important taxonomic characters were traceable. *Cypraea capensis* is the type species of the subgenus *Cypraeovula* Gray, 1824.

Both specimens were sexually mature females with bright orange ovaries containing ripe ova. A simple thin-walled bursa copulatrix and an apparently glandular receptaculum seminis were present. The mantle (in preservative) was thin, smooth and narrow, the siphonal margin apparently smooth. In life (pers. comm. Mrs. Faulkner) the mantle was not observed to be ever expanded over the shell; in colour it was brownish, with dark dots and faint white lines; the foot and tentacles were bright orange-yellow.

The radula of this species was figured by SCHILDER (1932: fig. 12), the present material agreeing in all features save for details of the shape of the cusps; the dentition type is that of Kay's category R1.

Unfortunately the radula cannot be interpreted taxonomically in view of the lack of information on the dentition of related species. Not unexpectedly there is a certain resemblance to BARNARD's figure (1963: 5c) of

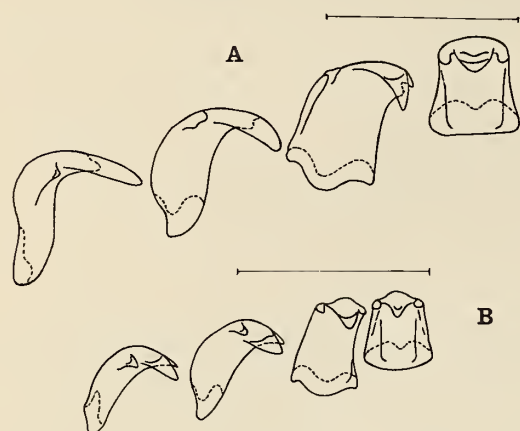


Figure 1

Radulae of

(A) *Cypraea fultoni* Sowerby and (B) *Cypraea capensis* Gray

Line represents 0.5 mm

the radula of the species recorded by him as a globose form of *Cypraea fuscorubra* Shaw, 1909 (although internal bracts were not indicated by him). Whatever the true identity of his material, it does seem to represent the subgenus *Luponia* Gray, 1832, which must be regarded as a synonym of *Cypraeovula*, *Cypraea* (*Cypraeovula*) *amphithales* Melvill, 1888 being completely intermediate in shell characters between the two groups.

Cypraea capensis clearly does not fit into either of KAY's anatomical categories (*op. cit.*: 285), combining an R1-type dentition with female genitalia of the *tigris*-type. It is interesting to note that WILSON & McCOMB (1967: 466) found a similar combination to occur in the subgenus *Zoila* Jousseaume, 1884. While *Cypraeovula* was referred, as a full genus, to the subfamily Cypraeovulinae by SCHILDER (1936: 84), *Zoila* was allocated first to the Cypraeinae, then (SCHILDER, 1965: 176) to the Cypraeorbinae.

For future statistical purposes we give the following quantitative data derived from the shells of the two female *Cypraea capensis* recorded above.

Specimen A:

Dimensions 29.7×17.6 mm; columellar teeth 41, labral¹ teeth 25

Specimen B:

Dimensions 29.3×18.3 mm; columellar teeth 44, labral teeth 26

These specimens were collected from under rocks in low tide pools and must be regarded as strays from the infratidal region.

The distribution data given by BURGESS (1970: 322) are almost completely erroneous. *Cypraea capensis* reaches its western limit at Jeffreys Bay ($24^{\circ}55'E$), where even beach-worn shells are very rare. It is moderately common in the Port Alfred ($26^{\circ}54'E$), to Kei River mouth ($28^{\circ}23'E$) area, but becomes scarcer in Transkei waters, and appears to attain its eastern limit at Port St. Johns ($29^{\circ}32'E$).

Literature Cited

- BARNARD, KEPPEL HARCOURT
1963. Contributions to the knowledge of South African marine Mollusca. Part III. Gastropoda. Prosobranchiata. Taenioglossa. Ann. So. African Mus. 47 (1): 1-199; 37 text figs.
- BURGESS, C. M.
1970. The living cowries. A. S. Barnes & Co., Cranbury, N. J. pp. 1-389; pls. 1-44
- COX, LESLIE REGINALD
1960. General characteristics of Gastropoda. In R. C. MOORE (ed.) Treatise on invertebrate palaeontology, prt. I, 1: 84-169; figs. 51-88E
- KAY, ELIZABETH ALISON
1960. Generic revision of the Cypraeinae. Proc. Malacol. Soc. London 33 (6): 278-287; 8 text figs.; 1 table
- ONIONS, C. T. (ed.)
1967. The shorter Oxford English dictionary. Third Edition; Clarendon Press, Oxford
- SCHILDER, FRANZ ALFRED
1932. Beiträge zur Kenntnis der Cypraeacea. No. 16. Die Radula einiger bisher nur als Schalen bekannter Arten. Zool. Anz. 100 (7-8): 166-170
1936. Anatomical characters of the Cypraeacea which confirm the conchological classification. Proc. Malacol. Soc. London 22 (2): 75-112; 2 pls.
1965. The geographical distribution of cowries. The Veliger 7 (3): 171-183; figs. 1-3
- WILSON, BARRY R. & JENNIFER A. McCOMB
1968. The genus *Cypraea* (subgenus *Zoila* Jousseaume). Indo-Pacific Mollusca 1 (8): 457-484

¹ The adjective "labial," conventionally used to indicate the outer lip in cypraeid literature, is derived from the noun *labium*, which in reality refers to the inner lip (*cf.* Cox, 1960: 131; ONIONS, 1967: 1095), *i. e.* in the present context "labial" would be synonymous with "columellar"!